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Charles S. Korson

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Southwest Region

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Economic Status of the California Pink Shrimp Fishery in 1983

I. Highlights

Landings of pink shrimp (Pandalas jordani) in California, Oregon, and Washington in 1983 totaled 13.3 million pounds. This was down 52 percent from the estimated Pacific coast landings of 28.0 million pounds in 1982, and 73 percent below the 1978-1982 average of 49.4 million pounds (Table 1). California landings in 1983 were only 1.13 million pounds, the lowest total since the dismal 1973 season when 1.25 million pounds were landed. The 1983 California catch was 75 percent under the 1982 total of 4.54 million pounds and 82 percent below the 1977-82 annual average of 6.4 million pounds. Thus, shrimping in California was extremely depressed in 1983, paralleling the sharp decline in the three-state catch. Within California, landings were concentrated in the Morro Bay area, replacing the Eureka/Crescent City area as the port(s) accounting for the majority of landings.

II. Components of the Fishery

The west coast pink shrimp population is considered to be a single stock. The stock is divided into 10 subunits according to the physical separation of the shrimp beds along the coast and/or variations in age structure (PFMC, 1981). Those beds important in California are located off Eureka (State area A), Fort Bragg (area B-1), Bodega Bay (area B-2), and Morro Bay (area C). Eureka/Fort Bragg beds have historically been most productive.

The strength of the coastal shrimp resource is dependent on the size of spawning stocks and ocean conditions. Spawning populations were reportedly smaller than normal all along the coast in 1983 apparently due to weak

upwelling and heavy predation by abundant schools of Pacific whiting, translating into high natural mortality and fewer recruits entering the exploitable population. Although ocean conditions began to improve in 1984, west coast scientists do not expect shrimp abundance to increase noticeably until late 1985 or until 1986 (Pacific Fishing, 1984).

The California shrimp resource is exploited exclusively by commercial otter trawl vessels using both double-rig and single-rig trawl gear. The commercial fleet mainly consists of combination vessels which are capable of switching into the groundfish, crab, salmon and albacore fisheries. There is no recreational fishery for the pink shrimp resource.

California has adopted closures and gear restrictions to regulate the harvest of the pink shrimp resource. The shrimp season is currently open from November 1 to April 15 of the following year. Waters inside three miles from shore are closed to trawl nets. Legal gear is defined as either otter or beam trawl nets with mesh no less than 1 3/8 inches stretch measure between knots in areas A, B-1 and B-2, and no less than 1 1/2 inches in area C.

III. Commercial Harvesting Sector

In 1983, 54 trawl vessels recorded shrimp landings in California, down 10 percent from 1982. Of these, 44 were based in California (the same number as in 1982), while 10 were based in Oregon. Three California-based vessels continued to land shrimp in Oregon but not in California, and 47 California-based shrimpers landed in California in 1983, the same as in 1982. One shrimp vessel active in 1982 sank before making any 1983 shrimp landings. Five new vessels became active in 1983 while four others chose not to participate in the shrimp fishery in 1983.

California vessels fished shrimp more extensively off Oregon and Washington in 1983 than in 1982. Nine California vessels landed shrimp in Washington in 1983 compared to only one in 1982; and 17 California vessels landed in Oregon, up one from 1982. The size, quality and amount of shrimp caught proved to be better off Destruction Island, Washington, and off Oregon early in the season than from the main grounds off northern California (Pacific Fishing, 1984). Only 857 pounds of shrimp were caught from the bed located off the Eureka/Ft. Bragg area in 1983.

The exvessel value of the California shrimp landings in 1983 was approximately $880,000; this was a 63 percent decrease from the ex-vessel value recorded for 1982. The decline in landings was responsible for the large drop in total value as the average exvessel price increased from $.516 to $.731 per pound in 1983. Adjusted for inflation, the total exvessel value was 64 percent lower than in 1982, while exvessel prices moved up 36 percent.

The average pounds landed per vessel declined to only 20,900 pounds in 1983 from an estimated 75,700 pounds in 1982. Similarly, gross revenue per vessel from California landings was down 59 percent to only $16,300. After correcting for inflation, the real value per vessel decreased 54 percent. The average shrimp trawler landing in California appeared to have substantially lower gross income from shrimping in 1983.

The only consolation to the 1983 season was the good catch of large size shrimp coming from the bed off of Morro Bay. Landings in Morro Bay went from 484,000 pounds in 1982 to over 758,000 pounds in 1983 (Table 2). Shrimp reportedly averaged 75-count per pound (Pacific Fishing, 1984).

The normally productive grounds off northern California yielded essentially no catches in 1983. Landings in the Crescent City/Ft. Bragg area declined to only 212,000 pounds, a drop of 94 percent from the 3.4 million

pounds landed in 1982 (Table 2). Landings in northern California ports were taken primarily from grounds off Oregon.

Earnings of shrimp vessels in other fisheries cannot be determined at this time. The principal complementary fisheries are groundfish, crab, salmon, and albacore. The exvessel value of the salmon, groundfish and Dungeness crab landings in California were all lower in 1983; the albacore fishery provided a bit of relief with landings increasing 64 percent. Although the extent of shrimp vessel participation in each of these fisheries is unknown, it is unlikely that California shrimpers generated enough additional revenue in alternative fisheries to compensate for poor shrimp production in 1983.

Biologists point to strong currents and unusual oceanographic conditions associated with El Nino as the reasons for relatively low abundance levels and for shrimp populations moving laterally up or down the coast. Another factor apparently playing a role in the declining shrimp resource is heavy predation by growing coastal populations of Pacific whiting. The condition of California shrimp stocks in 1984 is not expected to improve much due to weak coastal upwelling, continued evidence of small spawning classes of shrimp, and the larger than normal schools of Pacific whiting (Pacific Fishing, 1984).

California Shrimp Processors

California buyers process shrimp landed in California and Oregon as well as groundfish, Dungeness crab, and salmon. Revenue from shrimp processing is significant for these firms, but it generally accounts for less than 20 percent of their average total revenue, even in very good shrimp years.

Processors purchased and sold better quality shrimp in 1983 because shrimp were generally of good size. At the beginning of the season, wholesale

prices started at $3.60-3.75 per pound, which was the ending price for the 1982 season. Wholesale prices soon increased to $4.00 per pound when landings slumped and processors were forced to pay higher ex-vessel prices. By the end of the 1983 season, west coast shrimp in vacuum packed tins was selling for $4.25-4.50 per pound (Pacific Fishing, 1984). The substantially higher prices processors received for shrimp were insufficient to offset the sharp reduction in sales volume, undoubtedly resulting in lower revenues from shrimp production for California processors. Some west coast processors left the shrimp market entirely, as high ex-vessel prices and increasing competition from foreign imports made margins unprofitable in 1983 (Pacific Fishing, 1984).

Market Conditions for Pink Shrimp

California pink shrimp production is mostly in the form of cooked and peeled shrimp frozen in 5-pound tins. About 15-20 percent is peeled and sold fresh to restaurants and retail fresh fish outlets. As in 1982, no California shrimp were canned in 1983.

California pink shrimp enters the market indistinguishable from other pink shrimp from Washington and Oregon. It is distributed primarily in the western United States and appears in restaurants and retail stores as cocktail and "salad" shrimp. Pink shrimp competes directly with other high quality small shrimp, both imported and domestic. To a lesser degree, it competes with lower quality shrimp (primarily imports), canned shrimp from Alaska, other seafood, meat, and poultry.

The demand for west coast pink shrimp showed signs of weakening by the end of the 1983 season as the wholesale price broke above the $4.00 per pound level. Both lower production in California, Oregon and Washington and a 61

percent drop in the Alaskan shrimp catch (6.6 million pounds in 1983, compared to 17 million pounds in 1982) initially led to upward pressure on west coast domestic prices. Imports of less expensive shrimp from Norway and Canada entered markets and competed directly with the west coast product (Table 3). Imports of "peeled raw" and "peeled-other fresh or frozen shrimp" from Norway increased 438 percent and 322 percent respectively. Imports of "peeled other fresh or frozen shrimp" from Canada increased from 936,000 pounds in 1982 to 2.4 million pounds in 1983. Pacific Fishing (1984) reports that not only was the price of imports cheaper but many U.S. wholesalers consider Norwegian shrimp to be a better quality product than west coast table shrimp. Under these conditions, and with low domestic landings and the inflated value of the U.S. dollar, imports supplanted west coast shrimp in domestic markets to a much greater degree in 1983 than in 1982.

Table 1 - Annual Landings (thousands of pounds) and Ex-Vessel Value (thousands of dollars) of Pink Shrimp in California, Oregon and Washington from 1978-1983.

Year	California		Oregon		Washington		Total	
	Lbs	$	Lbs	$	Lbs	$	Lbs	$
1978	13,889	3,658	56,997	14,900	13,987	3,000	84,973	21,558
1979	4,928	1,870	29,587	11,200	12,135	4,400	46,650	17,470
1980	4,473	2,570	30,152	16,600	12,600	6,700	47,225	25,870
1981	4,084	2,086	25,918	11,700	10,055	4,600	40,057	18,386
1982	4,544	2,364	18,462	9,600	4,999	2,500	28,005	14,464
1978-82 Average	6,384	2,510	33,533	12,800	10,755	4,240	49,362	19,550
1983	1,130	881	6,547	4,673	5,656	4,191	13,335	9,745

Source: Oregon and Washington Catch data from PMFC Crab and Shrimp Data Series, reproduced in Oregon Department of Fish and Wildlife draft report on 1983 Oregon Shrimp Fishery, March 1984; 1978, 1980-1983 California catch data from California Department of Fish and Game Annual Fish Bulletins; 1979 California data taken from Draft FMP for Pink Shrimp, April 1981.

Table 2 - California Pink Shrimp Landings by Port in 1983 and 1982.

Port	1983 Lbs	1983 $	1982 Lbs	1982 $
Eureka	160	121	619,497	315,764
Crescent City/Ft. Bragg	212,067	147,052	3,401,514	1,741,747
Monterey	137	352	553	920
Santa Barbara	11,429	9,211	6,545	3,087
Morro Bay	758,550	606,150	484,075	282,545
Avila	145,913	116,707	14,100	7,790
Ventura	1,341	915	15,343	8,617
San Francisco/Bodega Bay	0	0	2,408	3,215
TOTAL	1,129,597	880,517	4,544,05	2,363,685

Source: California Department of Fish and Game Annual Fish Bulletin Reports for 1982 and 1983.

Table 3 - Imports of Shrimp Competing Primarily in West Coast Shrimp Markets for 1982 and 1983.

Origin	Product Type	Pounds 1982	Pounds 1983	Dollars ($) 1982	Dollars ($) 1983
Norway	Shell-on, Fresh and Frozen	512,926	522,620	1,324,455	1,451,644
	Canned	39,416	236,685	127,521	815,076
	Peeled Raw, Fresh and Frozen	374,091	2,012,236	1,080,584	6,913,830
	Peeled other, Fresh and Frozen	1,916,401	8,093,073	5,869,843	27,078,895
Canada	Shell-On, Fresh and Frozen	1,843,888	1,456,901	2,489,708	2,481,753
	Canned	100,305	170,905	263,285	425,225
	Peeled Raw, Fresh and Frozen	803,395	410,462	1,175,522	1,534,117
	Peeled other, Fresh and Frozen	935,892	2,409,632	2,737,964	6,064,948

Source: U.S. Department of Commerce, Bureau of Census.

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